



[49 CFR Parts 171, 172, 173, and 176]

[Docket No. HM-166; Notice 78-11]

# SHIPMENT OF HAZARDOUS MATERIALS BY WATER

AGENCY: Materials Transportation Bureau, Research and Special Programs Administration, DOT.

ACTION: Notice of Proposed Rulemaking.

SUMMARY: The materials Transportation Bureau is proposing to amend the regulations pertaining to the shipment of hazardous materials by vessel. The proposals involve relatively minor changes with respect to preparation of dangerous cargo manifest; requirements for cargo inspection; specific requirements for certain materials regulated for water shipments only; and several other miscellaneous changes. A proposal to re-state Subpart F of Part 176, Special Requirements for Barges, is also contained in this notice. These proposals are based upon either a petition for rulemaking or on the initiative of the Bureau in an effort to clarify, simplify or eliminate existing regulations relating to water shipments.

DATE: Comments by January 29, 1979.

ADDRESS: Send comments to Dockets Branch, Materials Transportation Bureau, U.S. Department of Transportation, Washington, D.C. 20590. It is requested that five copies be submitted.

## FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION: This document is anticipated to be the first of a series of notices and amendments to incorporate changes in the hazardous materials regulations based on either petitions for rulemaking submitted in accordance with 49 CFR 102.31 or on the Bureau's own initiative. It is expected that each notice and corresponding amendment will be grouped generally by subject area (e.g., shipment of hazardous materials by vessel) and will be published in the FEDERAL REGISTER under this docket number on a continuing basis. The petitions to be considered in this docket are those which seek to effect various miscellaneous changes, to clarify an ambiguously written rule, to eliminate unnecessary regulations and duplications, or to authorize new shipping al-

## DEPARTMENT OF TRANSPORTATION

### MATERIALS TRANSPORTATION BUREAU

WASHINGTON, D.C. 20590

ternatives which are non-controversial and which do not require extended periods of time for public participation.

Each proposed rule in this notice is based upon either: (1) A petition for rulemaking submitted by the public and upon data and analysis supplied by the petitioner, or (2) the Bureau's own initiative to clarify, simplify, or eliminate existing regulations relating to water shipments. The proposals are summarized under the subject headings listed below.

1. *Dangerous Cargo Manifest—IMCO Hazard Class Entry.* The preparation of a dangerous cargo manifest, list or stowage plan is required for all carriers of hazardous materials by water. This document must contain certain information in accordance with § 176.30 including the classification of each hazardous material aboard the vessel. Carriers are given the option of using the hazard class designated by the Hazardous Materials Table in 49 CFR 172.101 or the hazard class designated by the Inter-Governmental Maritime Consultative Organization's (IMCO) Dangerous Goods Code.

The regulations do not presently describe the manner in which the IMCO class entry should be made on the manifest. Because of the manner in which hazardous materials are classified by IMCO, the Bureau believes that the requirement for this entry on the manifest should be more precisely stated to adequately convey the hazard of the material on board the vessel.

There are nine classifications used by IMCO for hazardous materials. Of these nine, five classes (Classes 1, 3, 4, 5 and 6) are further subdivided into divisions. The class number or class name alone for these classes (except Class 3) may not accurately convey the precise hazard of the substance. For example, Class 4 contains three divisions of hazardous materials, each of which presents its own peculiar hazard: Class 4.1—Flammable solids, Class 4.2—Substances liable to spontaneous combustion, Class 4.3—Substances emitting flammable gases when wet. It is proposed that the division number or division name be used as the hazard class entry on the dangerous cargo manifest.

Another problem in this regard is encountered with IMCO Class 2, Gases. Although this class is not divided into divisions, it includes three distinct types of gases—Nonflammable, Flammable, and Poisonous—each requiring a different label. Again, the class number or name alone does not communicate the distinction between the different gases.

Consequently, this docket proposes to amend § 176.30(a)(5)(ii) to require the water carrier using the IMCO classifications to clearly indicate the

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hazard of a material on the dangerous cargo manifest by entering the class and division name or number for Classes 1, 4, 5, and 6 and to identify the entry for Class 2 gases by adding "Flammable gas," "Nonflammable gas" or "Poison gas," as appropriate.

2. *Dangerous Cargo Manifest—Manned and Unmanned Barges.* The responsibility for the preparation of the dangerous cargo manifest (§ 176.30) is that of the master of the vessel or his authorized representative. For barge shipments, however, this line of responsibility is lost due to the nature of barge operations. For barges, whether manned or unmanned, the responsibility for the preparation of the dangerous cargo manifest should rest with the individual who has the responsibility for loading the barge with hazardous materials. This individual is normally the person in charge of the barge for manned barge operations. However, for unmanned barge operations the individual loading the barge is the shipper himself or his authorized representative. For this reason, the Bureau believes that the shipper should be held responsible for preparation of a dangerous cargo manifest, lost or stowage plan for unmanned barges and should assign a specific individual for that purpose.

In addition, MTB is proposing that the dangerous cargo manifest be kept in a readily available location on the barge, whether manned or unmanned, and that a copy of the document be furnished to the person in charge of the towing vessel. This requirement is necessary to insure that all concerned parties are aware of the hazardous cargo and its location and to aid emergency response personnel.

3. *Special Requirements for Barges.* Subpart F of Part 176 prescribes special requirements for barges. This part of the water carrier regulations has remained basically unchanged since 1941 and no longer adequately reflects the current usage of barges transporting hazardous materials. Subpart F also contains extraneous information that is not necessary or appropriate in these regulations to insure the safe transportation of hazardous materials by water.

Section 176.96 in Subpart F presently classifies barges into Classes A, B, C, D, or E barges depending primarily upon the material of construction. It also includes detailed diagrams of each type of barge. The classification of barges is then used in Table III of § 176.999 to determine which barges are authorized to carry which classes of hazardous materials. MTB believes both of these relatively lengthy regulations can be terminated and replaced with the simple requirement that all

barges carrying any class of hazardous materials be constructed of steel unless other materials of construction are approved specifically by the Commandant, United States Coast Guard (USCG). This would reflect actual practice where most barges carrying hazardous materials today are constructed of steel.

New provisions are also being proposed in Subpart F to accommodate the loading and unloading of barges containing Class A explosives, nitro carbo nitrate, and certain ammonium nitrates aboard barge carrying vessels without the permits required by § 176.100 and 176.415.

4. *Cargo Inspection.* It is proposed to specify more clearly the cargo inspection requirements of water carriers contained in § 176.39(a). Paragraph (a) now requires an inspection of each hold or compartment containing hazardous materials at certain times during a voyage but makes no reference to freight containers, barges or hazardous materials stowed "on deck." The Bureau proposes to re-state this paragraph specifically including these items during cargo inspection because of the increasing traffic of freight containers and barges aboard cargo vessels. However, the new requirement does not require the freight container or barge to be opened during inspection.

5. *Motor Vehicles or Mechanical Equipment Powered by Internal Combustion Engines Using Combustible Liquid Fuel.* A motor vehicle or item of mechanical equipment powered by an internal combustion engine is excepted from the hazardous materials regulations when shipped by water if the fuel tank is empty, the engine is run until stalled for lack of fuel, both battery cables are disconnected, and no hazardous material is stowed in the vehicle. If any of these conditions is not met, the vehicle or equipment is regulated as an ORM-C by water and must be carried in compliance with the requirements in § 176.905.

A major exporter of such mechanical equipment has petitioned the Bureau to allow up to 110 gallons of fuel in the fuel tank and delete the requirement to run the engine until stalled if the internal combustion engines are of a type that employ combustible liquid fuel rather than flammable liquid fuel. The petitioner argues that internal combustion engines shipped separate from a vehicle body are regulated only if the engines employ flammable liquid fuel as specified in § 173.120(b). The petitioner also argues that running the engine until stalled for lack of fuel for each and every vehicle causes numerous operational problems during loading and unloading at port areas.

The Bureau believes there is some merit to the argument that internal combustion engines employing combustible liquid fuel are no more hazardous when mounted in a vehicle chassis than when shipped separately. Therefore in order to qualify for an

exception from the hazardous materials regulations, it is proposed to delete the requirement to run the engine until stalled if combustible liquid fuels are utilized. It is also being proposed to allow up to 110 gallons of combustible liquid fuel in the fuel tanks.

6. *Permit Requirements for Nitro Carbo Nitrate.* Permits from the USCG are required by § 176.415 before certain packages of nitro carbo nitrate and ammonium nitrates are loaded or unloaded at any waterfront facility in the United States. One such package that presently requires a permit is "nitro carbo nitrate in rigid containers with non-combustible inside packagings." It is proposed to authorize the loading and unloading of this package without the requirement of a permit. This was previously authorized for over 15 years under the Coast Guard regulations in 46 CFR prior to the consolidation of the hazardous materials regulations in Docket HM 103/112. The proposed amendment would rectify an oversight of Docket HM 103/112.

7. *Exceptions Authorized by § 176.11.* There have been numerous requests for interpretation of the requirements of § 176.11(a) from the Bureau. It is proposed to re-state this paragraph to clearly specify that water carriers may accept and transport hazardous materials (import, export, or passing through the U.S. between foreign ports) that are packaged, marked, labeled, classed, described, certified, and placarded in accordance with either IMCO or DOT requirements or any combination of the two. The important point to be made more explicit is that the package does not have to be prepared either completely in accordance with IMCO or completely in accordance with DOT. The hazardous material must be packaged, marked, labeled, classed, described, certified, and placarded as required, however, these individual requirements may be met by using either DOT or IMCO regulatory requirements. This exception, of course, applies only under the conditions specified in § 176.11(a).

8. *Miscellaneous proposals.* Several other miscellaneous changes pertinent to water shipments are being proposed by this notice. Two such proposals involve changes to proper shipping names in § 172.101 to more adequately identify commodities which are regulated for water shipments only.

Lead dross was previously defined by 46 CFR 146.27-100 as "the scrap, dross, or waste from sulfuric acid tanks. It is a mixture of metallic lead, lead sulfate and free sulfuric acid." It is the presence of sulfuric acid that causes this commodity to be hazardous. Lead dross is regulated under 49 CFR as an ORM-C. The IMCO Code regulates lead dross as a hazardous material, but only if the mixture contains more than 3% free acid. MTB is proposing to de-regulate lead dross which contains 3% or less free acid to be consistent with IMCO requirements since this commodity is regulated by water only.

"Metal borings, turning, shavings or cuttings" represents another group of materials regulated by water only. The Coast Guard has monitored the shipment of these materials for some time and contends that the shipping name is too broad since it includes nonferrous metals and stainless steel metals which are not self-heating. The Coast Guard maintains that there have been no known incidents where there has been spontaneous heating or a fire associated with the shipment of stainless steel borings or nonferrous metals. Consequently, MTB believes it appropriate that only ferrous metals (excluding stainless steel) be included in 49 CFR as regulated hazardous materials for water shipment.

A miscellaneous change to § 176.100 is being proposed to require the permit for unloading or loading Class A explosives to be obtained from the Captain of the Port rather than from the nearest Coast Guard District Commander as the regulations now state.

Finally, MTB is proposing to standardize the exceptions relating to import and export shipments of explosives in §§ 171.12(b) and (d) and 176.11(a). These paragraphs allow certain DOT requirements to be met by equivalent IMCO requirements for most hazardous materials except explosives and radioactive materials. However, § 171.12(b) refers only to Class A explosives while §§ 171.12(d) and 176.11(a) refer to "explosives" generally. The Bureau believes the proper reference in all cases should be to "Class A or B explosives."

Primary drafters of these proposals are John C. Allen, Office of Hazardous Materials Regulation, Exemptions and Regulations Termination Branch, Lt. Larry H. Gibson, United States Coast Guard, Cargo and Hazardous Materials Division, and Evan C. Braude of the Office of the Chief Counsel, Research and Special Programs Administration.

In consideration of the foregoing, 49 CFR Parts 171, 172, 173 and 176 would be amended as follows:

#### PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. In § 171.12, paragraphs (b) and (d) would be revised to read as follows:

§ 171.12 Import and export shipments.

(b) The requirements of § 171.2 with respect to classification and labeling notwithstanding, a hazardous material (other than Class A or B explosives or radioactive materials) which is classed and labeled in accordance with the IMCO Code and being imported into or exported from the United States or passing through the United States in the course of being shipped between places outside the United States, may be offered and accepted for transportation and transported within the United States if it is otherwise offered, accepted, and transported in accord-

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ance with this subchapter. When a material is transported within the United States by air, highway, or rail under an IMCO class, the entry on the shipping paper required by § 172.202(a)(2) must include a class set forth in this subchapter that most appropriately corresponds to the IMCO class. For example, according to IMCO, the description and class for ethylene oxide is "Ethylene Oxide, 2" or "Ethylene Oxide, Gas 2". While ethylene oxide in domestic transportation would be classed a flammable liquid, the class in this subchapter that most appropriately corresponds to the IMCO class is "flammable gas". The proper entry would therefore be

"Ethylene Oxide, Flammable Gas" or "Ethylene Oxide, 2 Flammable Gas."

(d) Section 171.2 notwithstanding, a hazardous material (other than Class A or B explosives or radioactive materials) being imported into or exported from the United States or passing through the United States in the course of being shipped between places outside the United States may be offered and accepted for transportation and transported by motor vehicle within a single port area (including contiguous harbors) when packaged, marked, classed and labeled in accordance with the IMCO Code, if the hazardous material is offered and accepted.

ed in accordance with the requirements of Subparts C and F of Part 172 of this subchapter pertaining to shipping papers and placarding. (See § 176.11 for exceptions applicable to vessels.)

# PART 172—HAZARDOUS MATERIALS TABLE AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

2 In § 171.101, the Hazardous Materials Table would be amended by revising the entries for "Lead dross" and "Metal borings, shavings, turnings or cuttings" to read as follows:

§ 172.101 Hazardous Materials Table

(1) Hazardous materials descriptions and proper shipping names	(2) (Change)	(3) Hazard class	(4) Labels (a) required (if not excepted)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
				(a) Exceptional	(b) Specific requirements	(a) Passenger carrying aircraft or railroad	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
				(a) Exceptional	(b) Specific requirements	(a) Passenger carrying aircraft or railroad	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
W Lead dross (containing 3 percent or more of acid).	(Change)	ORM-C	None	173.505	173.1010	-	-	1,2	1,2	Segregation same as for corrosive materials.
W Metal borings, shavings, turnings, or cuttings (ferrous metals only, except stainless steel).		ORM-C	None	173.505	173.1025	-	-	1,2	1,2	Keep dry, not permitted if temperature of material is at or above 130°F.

**PART 173—SHIPPERS—GENERAL REQUIREMENT FOR SHIPMENTS AND PACKAGINGS**

3. In § 173.1010, the section heading would be revised and paragraph (a) would be deleted and replaced with an unlettered paragraph to read as follows:

**§ 173.1010 Lead dross or scrap containing 3 percent or more free acid.**

Lead dross or scrap containing 3 percent or more free acid, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in steel barrels or drums or wooden barrels, boxes, or kegs.

4. In § 173.1025, the section heading and the section would be revised to read as follows:

**§ 173.1025 Ferrous metal borings, shavings, turnings, or cuttings (excluding stainless steel).**

Ferrous metal borings, shavings, turnings, or cuttings, other than stainless steel, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a metal barrel or drum.

**PART 176—CARRIAGE BY VESSEL**

5. In § 176.11, paragraph (a) would be revised to read as follows:

**§ 176.11 Exceptions.**

(a) A hazardous material being imported into or exported from the United States, or passing through the United States in the course of being shipped between places outside the United States, may be offered and accepted for transportation and transported by vessel when the requirements of the IMCO Code are substituted for the corresponding requirements of this subchapter with respect to either packaging, marking, labeling, classification, description, certification or placarding. All hazardous materials must otherwise be stowed and carried in accordance with this Part.

(1) Hazardous materials prepared in compliance with the above requirements may also be offered and accepted for transportation and transported by a motor vehicle used in connection with the discharge or loading of a vessel and not operating on a public street or highway.

(2) This exception does not apply to the following:

(i) A hazardous material classed as Explosive A or B, or Radioactive material, or

(ii) A material which is a hazardous material under this subchapter, but which is not a hazardous material

under the provisions of the IMCO Code.

6. In § 176.30, the introductory text of paragraph (a), and paragraphs (a)(5)(ii), (c) and (d) would be revised; paragraph (e) would be added to read as follows:

**§ 176.30 Dangerous cargo manifest.**

(a) Except as provided in paragraph (d), the master of a vessel transporting hazardous materials or his authorized representative shall prepare a dangerous cargo manifest, list, or stowage plan. This document may not include a material which is not subject to the requirements of 49 CFR or the IMCO Code. This document must be kept in a designated holder on or near the vessel's bridge. It must contain the following information:

(5) \* \* \*

(ii) The Inter-Governmental Maritime Consultative Organization's Dangerous Goods Code as follows:

(A) For classes 3, 7, 8 and 9, either the class named or numerical designation of the class must be used.

(B) For Classes 1, 4, 5, and 6, either the division name of numerical designation of the division must be used.

(C) For Class 2, the class name or numerical designation of the Class must be accompanied by the description "Flammable gas," "Nonflammable gas" or "Poison gas," as appropriate.

(c) The master, or a licensed deck officer designated by the master and attached to the vessel, or in the case of a barge, the person in charge of the barge, shall acknowledge the correctness of the dangerous cargo manifest, list, or stowage plan by his signature.

(d) For barges, manned or unmanned, the requirements of this section apply except for the following:

(1) In the case of a manned barge, the person in charge of the barge shall prepare the dangerous cargo manifest.

(2) In the case of an unmanned barge, the shipper is responsible for the preparation of a dangerous cargo manifest, list, or stowage plan and must designate an individual for that purpose.

(3) For all barges, manned or unmanned, the dangerous cargo manifest must be on board the barge in a readily accessible location and a copy must be furnished to the person in charge of the towing vessel.

(e) Each carrier who transports or stores hazardous materials on a vessel shall retain a copy of the dangerous cargo manifest, list, or stowage plan for at least one year, and shall make

that document available for inspection in accordance with § 176.36(b).

7. In § 176.39 paragraph (a) would be revised to read as follows:

**§ 176.39 Inspection of cargo.**

(a) *Manned vessels.* The master of a vessel transporting hazardous materials shall cause an inspection of each hold, compartment or deck space (on deck and under deck) in which hazardous materials are stowed to be made after stowage is complete, and at least once every 24 hours thereafter, weather permitting, to ensure that the cargo is in a safe condition and that no damage caused by shifting, spontaneous heating, leaking, sifting, wetting, or other cause has been sustained by the vessel or its cargo since loading. However, freight containers or individual barges need not be opened. A vessel's holds equipped with smoke or fire detecting systems having an automatic monitoring capability need not be inspected except after stowage is complete and after periods of heavy weather. The master shall cause an entry to be made in the vessel's deck log book for each inspection of the hazardous materials performed.

8. Subpart F of Part 176 would be deleted, and a new Subpart F would be added to read as follows:

**Subpart F—Special Requirements of Barges**

Sec.

176.95 Application.

176.96 Materials of construction.

176.97 Prohibition of dump scows.

176.98 Stowage of hazardous materials on board barges.

176.99 Permit requirements for certain hazardous materials.

**Subpart F—Special Requirements for Barges**

**§ 176.95 Application.**

Except as provided in this subpart, the requirements prescribed elsewhere in this subchapter for vessels are applicable to the transportation of packaged hazardous materials on board barges.

**§ 176.96 Materials of construction.**

Unless otherwise approved by the Commandant, U.S. Coast Guard (GMHM, Washington, D.C., 202-426-1577) only barges constructed of steel are permitted to carry hazardous materials.

**§ 176.97 Prohibition of dump scows.**

Dump scows are barges having cargo carrying compartments of the hopper type and fitted with a bottom dump or a side dump. This type of barge is prohibited from the carriage of any class of hazardous materials.

**198 Stowage of hazardous materials on board barges.**

A material for which "on deck" stowage only is required by Column (7) of the Hazardous Materials Table (§ 172.101 of this subchapter) may be stowed "under deck" on unmanned barges.

**§ 176.99 Permit requirements for certain hazardous materials.**

The permits required by §§ 176.100 and 176.415 for loading, unloading, and handling Class A Explosives, nitro carbo nitrate, and certain ammonium nitrates must be obtained when these materials are loaded on, unloaded from, or handled on board a barge or barge carrying vessel. However, a barge loaded with these materials being placed on, removed from, or handled on board a barge carrying vessel is not subject to these permit requirements.

9. Section 176.100 would be revised to read as follows:

**§ 176.100 Permit for Class A explosives.**

Before a shipment of Class A explosives may be discharged from, loaded on, handled, or restowed on board a vessel at any place in the United States, its territories, or its possessions (except the Panama Canal Zone), the carrier must obtain a permit from the Port Captain of the Port. Exceptions to this permit requirement may be given only by the Captain of the

Port or his authorized representative.

10. In § 176.415, paragraph (b)(6) would be added and paragraph (c)(2) would be revised to read as follows:

**§ 176.415 Permit requirements for nitro carbo nitrate and certain ammonium nitrates.**

(b) \* \* \*

(8) Nitro carbo nitrate in a rigid container with non-combustible inside packaging.

(c) \* \* \*

(2) If the material is ammonium nitrate (organic coated) in rigid metal drums with non-combustible inside packaging, an ammonium nitrate mixture containing more than 60 percent ammonium nitrate, or ammonium nitrate-phosphate, in rigid containers with combustible inside packaging, it must be loaded or unloaded at a facility removed from congested areas or high value or high hazard industrial facilities;

11. In § 176.905 paragraph (a) would be revised to read as follows:

**§ 176.905 Motor vehicles or mechanical equipment powered by internal combustion engines.**

(a) A motor vehicle or any mechanical equipment powered by an internal combustion engine is subject to the requirements of this subchapter when carried as cargo on a vessel if

the engine or fuel tank contains fuel or if either battery cable is connected. Such vehicles or equipment are excepted from the requirements of this subchapter if the following requirements are met:

(1) For a motor vehicle or mechanical equipment having an internal combustion engine employing fuel classed as flammable by this subchapter, the fuel tank is empty, the engine is run until it stalls for lack of fuel, both battery cables are disconnected, and no hazardous material is stowed in the vehicle or equipment, or

(2) For motor vehicle or mechanical equipment having an internal combustion engine employing liquid fuel classed as combustible by this subchapter, the fuel tank contains 110 gallons of fuel or less, both battery cables are disconnected and no hazardous material is stowed in the vehicle or equipment.

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53(e) and paragraph (a) of App. A to Part 100).

NOTE.—The Materials Transportation Bureau has determined that this document will not have a major impact under Executive Order 12044 and DOT implementing procedures (43 FR 9582). A regulatory evaluation is available for review in the docket.

Issued in Washington, D.C., on November 17, 1978.

ALAN I. ROBERTS,  
Associate Director for Hazardous Materials Regulation, Materials Transportation Bureau.  
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